Reinterpretation of deontic logic in the light of logical pragmatics

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Among many famous philosophers, like G.W. Leibniz (1646–1716) or A. Meinong (1853–1920), who dealt with formal problems of normativity one figure stands out as the proper founder of the research field. It was Georg Henrik von Wright (1916–2003) who first gave the name 'deontic logic' and systematic logical foundations to the formal study of normativity (von Wright, 1951) and whose fruitful contributions to the field spanned the interval of half a century; an overview of his last position is given in (von Wright, 1999). Many hard philosophical problems and paradoxes have arisen during the development of deontic logic. These facts lead Von Wright towards critical and even sceptical view on the very possibility of deontic logic, but, as the quote below vividly shows, the way out of paradoxes lies on the side of logical pragmatics, i.e., in the reinterpretation of deontic logic, as the study of the *use* of language in "rational norm-giving activity".

> Deontic logic, one could also say, is neither a logic of norms nor a logic of norm-propositions but a study of conditions which must be satisfied in rational norm-giving activity. It is strict *logic* because the conditions which it lays down are derived from *logical* relations between states in the ideal worlds which normative codes envisage. (von Wright, 1993, 111)

Von Wright's reinterpretation of deontic logic developed gradually and has introduced a number of important conceptual distinctions and theses, among which the following stand out: the distinction between prescriptive and descriptive use of deontic sentences; the thesis that relation between permission and absence of prohibition is not conceptual but normative in character, and this normative relation is one among other "perfection properties" of the normative system, the norm-giver (in the norm-giving activity by which the normative system is produced) ought to achieve perfection properties of the system. Some of these theses are summarized in Figure 1. In spite of Von Wright's highest authority in deontic logic, a complete formal explication for his reinterpretation has not been given as yet. Here

by the 'formal explication' is meant a model in terms of which definenda are given.

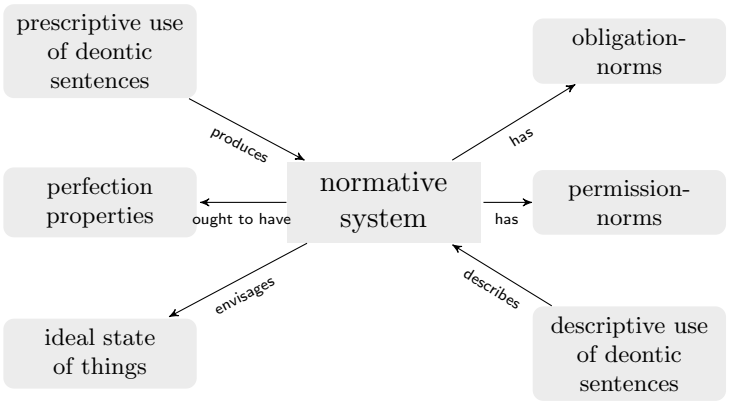

Figure 1: A map depicting a part of the "conceptual space" of norm-giving activity. One the same deontic sentence can be used prescriptively and descriptively. In prescriptive use the norm-giver ought to achieve perfection properties. In descriptive use an observer describes a real and possibly imperfect system.

The "one set model" for deontic concepts has been adopted by many authors thanks to its simplicity. Namely, 'it is obligatory that φ', $\mathrm{O}\varphi$, is modelled as 'sentence φ belongs to the set $\mathcal{N}$ of norms', $\ulcorner\varphi\urcorner \in \mathcal{N}$. The other definienda are obtained in the similar way: permission, $\mathrm{P}\varphi$, is modelled as non-membership of the contradictory content, $\ulcorner\neg\varphi\urcorner \notin \mathcal{N}$; and prohibition, $\mathrm{F}\varphi$, is just an obligation with contradictory content, $\mathrm{O}\neg\varphi$. In this model the relation between obligation and permission is conceptual: $\neg\mathrm{P}\neg\varphi$ is modelled as $\neg\ulcorner\varphi\urcorner \notin \mathcal{N}$, which is equivalent to $\ulcorner\varphi\urcorner \in \mathcal{N}$, the translation of $\mathrm{O}\varphi$.

In Von Wright's reinterpretation of deontic logic the distinction between real and perfect normative systems plays an important role. It is impossible to give a description of an imperfect normative system with a mismatch between obligations and permissions within the "one set model". For example, a system $\mathcal{N}$ based on $\mathrm{O}\varphi$ and $\mathrm{P}\neg\varphi$ is an impossible object since it requires $\ulcorner\varphi\urcorner \in \mathcal{N}$ and $\ulcorner\varphi\urcorner \notin \mathcal{N}$. Therefore, a more complex model must be introduced in order to enable the description of the difference between real and perfect systems.

A "two sets model" has been introduced in (Hansen, 2014), but the solution provided is not fully adequate for the formal explication of Von Wright's reinterpretation of deontic logic. Let $\mathcal{T}$ be the set of explicitly promulgated norms, and let function n deliver contradictory propositions as follows: $n(\varphi) = \neg\varphi$ and $n(\neg\varphi) = \varphi$. Relying on the two sets model introduced in (Žarnić, 2015), the thesis of this paper is that the appropriate model for the formal explication of Von Wright's reinterpretation is given by the pair $\langle\mathcal{N}, \overline{\mathcal{N}}\rangle$, where set $\mathcal{N} = \{\ulcorner\varphi\urcorner \mid \mathrm{O}\varphi \in \mathcal{T}\}$ has contents of obligation-

norms (with prohibitions treated as obligations with contradictory content), while set $\overline{\mathcal{N}} = \{\ulcorner n(\varphi)\urcorner \mid \mathrm{P}\varphi \in \mathcal{T}\}$ has contradictory contents of permission norms, and is called 'permission norm counter-set'.

The acceptability of this model can be checked against Von Wright's hypothesis that standard deontic logic depicts some perfection properties of a normative system. If the two sets model is adequate, then the translation of a valid formula of standard deontic logic will typically result in the description of a perfection property of the normative system. Given that there are two sets, there are three kinds of perfection properties: perfection properties for the each set and the perfection properties of the relation between the sets. Therefore, the three translation functions are needed; they have been introduced in (Žarnić, 2016). Consider as an example axiom schema (D), characteristic of deontic logic: $\mathrm{O}\varphi \to \mathrm{P}\varphi$. Translations show that the three perfection properties characterized by (D) axiom schema are: (i) consistency of obligation norm set, $\ulcorner\varphi\urcorner \in \mathcal{N} \to \ulcorner\neg\varphi\urcorner \notin \mathcal{N}$; (ii) completeness of permission norm counter set, $\ulcorner\varphi\urcorner \in \overline{\mathcal{N}} \vee \ulcorner\neg\varphi\urcorner \in \overline{\mathcal{N}}$; (iii) the relational property defined by $\ulcorner\varphi\urcorner \in \mathcal{N} \to \ulcorner\neg\varphi\urcorner \in \overline{\mathcal{N}}$. The translations can be applied in the philosophical analysis. Suppose that we want to add the "free choice permission" axiom: $\mathrm{P}(\varphi \vee \psi) \to (\mathrm{P}\varphi \wedge \mathrm{P}\psi)$. If the supposed axiom is sound, then it describes perfection properties. The application of the translation function which delivers claims on properties of the obligation norm set, under indubitable assumption that closure under equivalence is its perfection property, gives the following property: $(\ulcorner\varphi\urcorner \in \mathcal{N} \vee \ulcorner\psi\urcorner \in \mathcal{N}) \to \ulcorner\varphi \wedge \psi\urcorner \in \mathcal{N}$. The possession of this property makes inconsistent any non-empty set, and so the supposed axiom must be rejected. The philosophical consequence is that the free choice permission does not belong to the statics of normativity but rather describes the effects of an retractive act.

Although no explicit mention of pragmatics turn can be found in Von Wright's later works on deontic logic, this characterization is appropriate since the use and users of language and language-constructions are taken into the picture. The textual core of a normative system can come into existence thanks to the prescriptive use of language, what has been explicated here as the production of set $\mathcal{T}$ of deontic sentences. The logical properties of real normative systems can be described using the language of the "logic of norm-propositions", what has been explicated here by translation to claims on membership in $\mathcal{N}$ and $\overline{\mathcal{N}}$. Some logical properties are "perfection-properties" of a normative-system, such as the consistency of obligation norm set and the completeness of permission norm counter-set. The absence of a certain perfection-property does not deprive a normative system of its normative force. For example, textual core $\mathcal{T} = \{\mathrm{O}\varphi, \mathrm{P}\neg\varphi\}$ in spite of its imperfection still manages to define the normative system $\langle\{\ulcorner\varphi\urcorner\}, \{\ulcorner\varphi\urcorner\}\rangle$.

In the prescriptive use of language the norm-giver ought to achieve some perfection properties of the normative system. Thus, there are two

types of *oughts*: the ought resulting from the norm-giving activity, and the **ought** to which the norm-giving activity is subordinated. According to Von Wright, deontic logic is a study of logical perfection properties; properties the achievement of which fulfils rationality conditions of norm-giving activity. The approach can be generalized so to include other roles, such as the role of norm-recipient, and other norm-related activities, such as normative reasoning.

Logic has sometimes been understood as the ethics of thinking. Von Wright's reinterpretation of deontic logic prompts us to understood logic also as the ethics of language use. In understanding deontic logic the perspectives of different social roles of should be taken into account as well as the purpose of norm giving activity. In this way deontic logic ceases to be a "zero-actor logic" and becomes the logic of language use which requires the presence of "users". This fact redefines deontic logic as a research which necessarily includes the stance of logical pragmatics.[1]

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[1]The author acknowledges support from Croatian Science Foundation (HRZZ) within the research project: LogiCCom–Logic, Concepts, and Communication, and from the organizers of the SOCREAL2016–4th International Workshop on Philosophy and Logic of Social Reality.